CLAIMS

1. A temperature set point adjusting and a temperature of an environment (Ts) measuring system for a cooling system, the adjusting and measuring system comprising:

- a sensing assembly (1);
- a processing unit (20);

the system (10) being characterized in that the sensing assembly (1) comprises a set of turns (2), an interaction element (3), the set of turns (2) and the interaction element (3) being detachably associable to each other, the set of turns (2) being subjected to a sampling voltage (V_P) and having a resistance (R_S);

the system (10) measuring the temperature of the environment (Ts) from the alteration of the resistance (R_S) of the set of turns (2); and

defining the temperature set point of the cooling system from the variation of the inductance (Ls) of the set of turns (2), obtained by displacing the interaction element (3) with respect to the set of turns (2).

2. A system according to claim 1, characterized in that the set of turns (2) is made from a material the resistivity of which varies with the temperature.

3. A system according to claim 1, characterized in that the interaction element (3) is a ferromagnetic material of high magnetic permeability.

4. A system according to claim 1, characterized in that the interaction element (3) is an electrically conductive material.

5. A system according to claim 3 or 4, characterized in that the interaction element (3) displaces with respect to the inside of the set of turns (2).

6. A system according to claim 5, characterized in that the sensing assembly (1) comprises an adjustment axle (5).

7. A system according to claim 6, characterized in that the adjustment axle (5) penetrates the inside of the interaction element (3) axially.

8. A system according to claim 7, characterized in that the adjustment system (5) has its surface threaded.

9. A system according to claim 8, characterized in that the adjustment axle (5) is operatively connected to a handle (4).

10. A system according to claim 9, characterized in that the handle (4) is a knob.

11. A system according to claim 3, characterized in that the interaction element (3) is provided with through-bored and internally threaded material.

12. A system according to claim 1, characterized in that the set of turns (2) is mounted around a guiding and adjusting device (2a).

13. A system according to claim 12, characterized in that the guiding and adjusting device (2a) comprises a cylindrical body (2b) provided with limiting borders (2c) at the end portions.

14. A system according to claim 13, characterized in that the interaction element (3) penetrates the inside of the guiding and adjusting element (2a) axially.

15. A sensing assembly characterized by comprising a set of turns (2) and an interaction element (3), the set of turns (2) and the interaction element (3) being detachably associable to each other, the set of turns (2) being subjected to a sampling voltage (V_P) and having a resistance (R_S).

16. A sensing assembly according to claim 15, characterized in that the set of turns (2) is made from a material the resistivity of which varies with the temperature.

17. A sensing assembly according to claim 15, characterized in that the interaction element (3) is a ferromagnetic material of high magnetic permeability.

18. A sensing assembly according to claim 15, characterized in that the interaction element (3) is an electrically conductive material.

19. A sensing assembly according to claim 15, characterized in that the interaction element (3) displaces with respect to the inside of the set or turns (2).

20. A sensing assembly according to claim 15, characterized by comprising an adjustment axle (5).

21. A sensing assembly according to claim 20, characterized in that the adjustment axle (5) penetrates the inside of the ferromagnetic element (3) axially.

22. A sensing assembly according to claim 21, characterized in that the adjustment axle (5) is threaded.

23. A sensing assembly according to claim 22, characterized in that the adjustment axle (5) is operatively connected to a handle (4).

24. A sensing assembly according to claim 23, characterized in that the handle (4) is preferably a knob.

25. A sensing assembly according to claim 24, characterized in that the interaction element (3) is provided with a through-bored and threaded material.

26. A sensing assembly according to claim 25, characterized in that the set of turns (2) is mounted around an adjusting and guiding device (2a).

27. Sensing assembly according to claim 26, characterized in that the adjusting and guiding device (2a) is defined by a cylinder (2b) and bored-through limiting ends (2c).

28. A sensing assembly according to claim 27, characterized in that the interaction element (3) penetrates the inside of the adjusting and guiding element (2a) axially.

29. A method of adjusting the temperature set point of a cooling system and measuring the temperature of an environment (Ts), characterized by comprising the steps of:

- applying a known sampling voltage (V_P) to a known value resistor in series with the set of turns (2);

- measuring the voltage obtained on the set of turns after a first measurement time (t_1) and a second measurement time (t_2); and

- determining the resistance (Rs) and the variable inductance (Ls) of the set of turns (2) from the voltage measures made in the first and second measurement times (t1, t2) previously determined.

30. A method according to claim 29, characterized in that the

step of determining the resistance (Rs) and the variable inductance (Ls), such measurements are carried out by a processing unit (20).

31. A method according to claim 30, characterized in that the step of obtaining the variable inductance (L_S) of the set of turns (2) is carried out after passage of the first measurement time (t_1) previously determined.

32. A method according to claim 30, characterized in that the step of obtaining the resistance (R_S) of the set of turns (2) is carried out after passage of the second measurement time (t_2) previously determined.

33. A method according to claim 30, characterized in that, in the step of detecting the resistance value (R_S), a value of a temperature of the environment (Ts) is obtained and that, in the step of detecting the value of the variable inductance (L_S), the adjustment of the temperature set point is foreseen.